

ICL NEWSLETTER

September 2007



August 2007 CTWatch Quarterly Released

Introduction

Lee Dirks, Microsoft Corporation

Tony Hey, Microsoft Corporation

The Shape of the Scientific Article in The Developing Cyberinfrastructure

Clifford Lynch, Coalition for Networked Information (CNI)

Next-Generation Implications of Open Access

Paul Ginsparg, Cornell University

Web 2.0 in Science

Timo Hannay, Nature Publishing

Reinventing Scholarly Communication for the Electronic Age

J. Lynn Fink,
University of California, San Diego

Philip E. Bourne,
University of California, San Diego

Interoperability for the Discovery, Use, and Re-Use of Units of Scholarly Communication

Herbert Van de Sompel,
Los Alamos National Laboratory

Carl Lagoze,
Cornell University

Incentivizing the Open Access Research Web

Tim Brody, University of Southampton, UK
Les Carr, University of Southampton, UK
Yves Gingras, Université du Québec à
Montréal (UQAM)

Chawki Hajjem, UQAM
Stevan Harnad,
University of Southampton, UK; UQAM
Alma Swan, University of Southampton, UK;
Key Perspectives

The Law as Cyberinfrastructure

Brian Fitzgerald, Queensland University of
Technology, Australia

Kylie Pappalardo, Queensland University of
Technology, Australia

Perspectives : Cyberinfrastructure For Knowledge Sharing

John Wilbanks, Science Commons

Perspectives : Trends Favoring Open Access

Peter Suber, Earlham College

Recent Conferences

George, Karl - Euro-Par 2007

Rennes, France August 28th

Thara - ISPA 07

Niagara Falls, Ontario August 29th

Jack - HPC 07

Zurich, Switzerland Sept 3rd

Karl, Shirley - ParCo 2007

Jülich & Aachen, Germany Sept 4th-7th

Alfredo, Jack - PPAM 2007

Gdansk, Poland Sept 9th-12th

Fengguang - ICPP-07

Xian, China Sept 10th-14th

Dave, Jack - HPEC 2007

Lexington, MA Sept 10th-20th

Keith, Dan - PERI Workshop

Chapel Hill, NC Sept 20th

Terry - Key Challenges in Modeling and Simulation

Fall Creek Falls Sept 24th

Stan - HPC Forum 2007

Santa Fe, NM Sept 26th-27th

George, Aurelien - Euro PVM-MPI

Paris, France Sept 30th-Oct 11th

Upcoming Conferences

Asim-VGraDS Workshop

Chapel Hill, NC Oct 11th-Oct 12th

Erika - Grace Hopper Celebration

Orlando, FL Oct 17th-Oct 20th

SCALASCA 0.9 released

New features include runtime summarization and new patterns. [\[MORE INFO\]](#)



Open MPI 1.2.4 released



This time the Open MPI team really added support for TotalView/DDT parallel debugger message queue debugging (it was mistakenly listed as "added" in the 1.2 release). This version also contains several bug fixes.

[\[MORE INFO\]](#)

HPC Challenge Awards at SC07



The DARPA High Productivity Computing Systems (HPCS) Program and IDC are pleased to announce the annual HPC Challenge Award Competition. The goal of the competition is to focus the HPC community's attention on developing a broad set of HPC hardware and HPC software capabilities that are necessary to productively use HPC systems. The awards session will be held during the SC07 conference on Tuesday Number 13th during the 12:15 – 1:15 BOF session in rooms C1 / C2 / C3. [\[MORE INFO\]](#)

NSF Board Approves Funds for Petascale Computing Systems at the UTK JICS

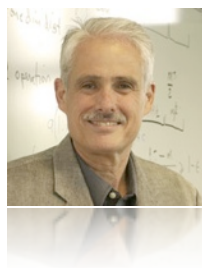


The \$65 million, 5-year project will include partners at Oak Ridge National Laboratory, the Texas Advanced Computing Center, and the National Center for Atmospheric Research. Under the direction of Dr. Thomas Zacharia, the group will acquire and provide to the research community a system with a peak performance of just under one petaflop that is almost four times the capacity of the current NSF-supported Teragrid. [\[MORE INFO\]](#)

Remembering Ken Kennedy

With Ken Kennedy's passing in February 2007 the world lost a great intellectual pillar and a truly wonderful human being. His many friends, colleagues, and collaborators share with SciDAC Review their remembrances of Ken's life and style.

[\[READ ARTICLE\]](#)



Papers

Pjesivac-Grbovic, J., Bosilca, G., Fagg, G., Angskun, T., Dongarra, J. **"MPI Collective Algorithm Selection and Quadtree Encoding,"** *Parallel Computing (Special Edition: EuroPVM/MPI 2007)*, Elsevier, 2007.

Pjesivac-Grbovic, J., Bosilca, G., Fagg, G., Angskun, T., Dongarra, J. **"Decision Trees and MPI Collective Algorithm Selection Problem,"** *Euro-Par 2007*, Rennes, France, Springer, 105–115, August, 2007.

Graham, R., Brightwell, R., Barrett, B., Bosilca, G., Pjesivac-Grbovic, J. **"An Evaluation of Open MPI's Matching Transport Layer on the Cray XT,"** *EuroPVM/MPI 2007*, September, 2007.

Fuerlinger, K., Dongarra J. **"On Using Incremental Profiling for the Performance Analysis of Shared Memory Parallel Applications,"** *Proceedings of the 13th International Euro-Par Conference on Parallel Processing (Euro-Par '07)*, Rennes, France, Springer LNCS, August, 2007.

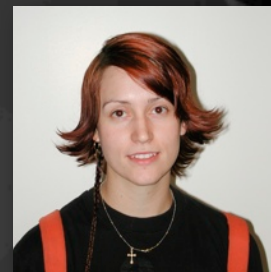
Fuerlinger, K., Moore, S. **"Continuous Runtime Profiling of OpenMP Applications,"** *Proceedings of the 2007 Conference on Parallel Computing (PARCO 2007)*, Juelich and Aachen, Germany, September, 2007.

Baboulin, M., Dongarra, J., Gratton, S., Langou, J. **"Computing the Conditioning of the Components of a Linear Least Squares Solution,"** University of Tennessee Computer Science Technical Report, UT-CS-07-604 (Also LAPACK Working Note 193), September 2007.

Gerndt, M., Fuerlinger, K. **"Specification and detection of performance problems with ASL,"** *Concurrency and Computation: Practice and Experience*, John Wiley and Sons Ltd., Vol. 19, no 11, 1451-1464, 2007.

Song, F., Moore, S., Dongarra, J. **"L2 Cache Modeling for Scientific Applications on Chip Multi-Processors,"** *Proceedings of the 2007 International Conference on Parallel Processing*, Xi'an, China, IEEE Computer Society, September, 2007.

Interview with Jelena Pjesivac-Grbovic



Jelena successfully defended her PhD dissertation this month. Congratulations Jelena!

Do you officially have your PhD?

No, I have to wait for this semester to be over and then I will be an official PhD. What is left is a pretty long story with the UT regulations. I have to complete the 3 dissertation hours which I do not need, but I had to take them.

How does it feel to be done and to be called Dr Pjesivac-Grbovic?

Don't know. I will be Dr. Pjesivac-Grbovic :) but having signature with PhD. is fun.

Could you retrace quickly your path to the PhD?

When I visited UT and ICL in January 2003, Jack told me that I can work either on numerical algebra software or this thing called MPI. At the time I was still working on a vascular tumor model with my mentor from LANL, and the code hit the wall: our application was too big to run on a single machine. It also turned out that it was almost embarrassingly parallel. So, when I went back to Ramapo (College in NJ), I implemented the MPI version of the model as my senior project. It had nearly linear speed up (well up to 8 processes - the largest machine at Ramapo) and I could grow tumors up to 1M cells. MPI was so cool, that I never considered the linear algebra seriously. And from then on, I was in very good hands with Graham and George as project leaders.

Was it difficult to take care of your 6 month old baby and finish your PhD?

Well, the hardest thing was to force myself to work on my dissertation and not to spend most of the day playing with the baby. The recipe for success: enormous help from my family (my husband, parents, brothers, mother-in-law), day-

care when the family was not available, and baby's good sleep schedule (i.e., pure luck).

Which general advice would you give students that are in a PhD Program or that want to enroll in a PhD program? What are the keys to success?

Know why you are doing it (even if it is just for the "coolness" factor) and take every opportunity to learn from more experienced people. I had lots of help from my friend who is faculty in Food Science. She instructed me on how to organize papers, how to talk to people at the conferences, etc. Also, use every opportunity to go to graduate student workshops (I went to two CRA-W). It sounds lame, but if 10 other people tell you they felt miserable when their paper was rejected, but then it finally got published and it felt great, you are more likely not to be completely depressed over the first rejection. Finally, if you get tired with the topic, find an internship doing something else. It is great context switch and can give you a new perspective on your work.

What are your future plans?

I will join Google, Inc. starting October 22nd 2007.

Will you keep in touch with ICL? Are you thinking of future collaborations with ICL?

I hope so - I still have to see how the 20% to do your own stuff really works. But I have already took my first step: I'll keep my ICL laptop until December :)

How do you see yourself 10 years from now?

It is impossible to tell. But hopefully, as a happy parent with great family and good career who owns a (large) cottage in the mountains in Montenegro (for vacations).

Erika is scheduled to defend her PhD dissertation on October 10th at 10:00 am. Good Luck!

Calling all Alumni!

Since 1989, many amazing students, post-docs, and staff have passed through the doors of ICL on their way to other exciting opportunities and careers. We often get asked, "Does anyone know where ----- is now?" or "Whatever happened to -----?" We want to hear from you! Send us an e-mail at icl-news@cs.utk.edu and tell us what you've been up to.

Battlecat now available

Battlecat is a cluster of 8 intel Core 2 Duo 2.13 GHz processors with 2 GB of RAM per node plus a dual dual-core Xeon 1.6 GH with 2 GB of ram (battlecat0).



People



Camille Coti has returned to LRI in Paris. She should be coming back to visit ICL next Spring.

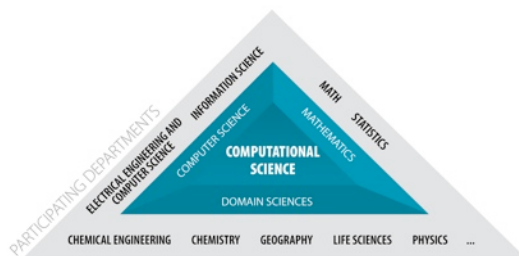


Daniel Becker is visiting ICL from Julich Germany until November. He is working on the PAPI project with Dan.

New Interdisciplinary Graduate Minor in Computational Science (IGMCS) begins this Fall semester

Initiated by the Chancellor in 2005, Jack was asked to lead an effort to create a new minor in Computational Science. The IGMCS program then evolved out of a set of meetings and discussions with other faculty and administration. Launched in August and modeled after a similar and successful program established by the Statistics Dept. a few years ago, the IGMCS enables a student to obtain a minor in Computational Science simultaneously with a graduate degree, at either the Masters or PhD level. Computational Science demands a basic level of understanding and skill in three discipline clusters — Mathematics, Computer/Information Science, and a "Domain Science," such as Physics, Geography, Biology, Chemical Engineering, etc. By formally recognizing this work through a Minor in Computational Science, the IGMCS program is designed to increase the value of the graduate degree that students receive in their chosen field. [\[MORE INFO\]](#)

COMPUTATIONAL SCIENCE: INHERENTLY INTERDISCIPLINARY



Party

From Jack and Sue: "We would like to invite you to our house for a very casual gathering on Friday October 12th 7:00 pm. We will be having the usual Buddy's BBQ."

LAWNs

Lawn 191

"A Class of Parallel Tiled Linear Algebra Algorithms for Multicore Architectures" Buttari, A., Langou, J., Kurzak, J. and Dongarra, J. UT-CS-07-600, September 7, 2007

Lawn 192

"Parallel eigenvalue reordering in real Schur forms." Granat, R., Kagstrom, B., Kressner, D. September 2007.

Book Chapters

Jack Dongarra, J., Luszczek, P. **"How Elegant Code Evolves With Hardware: The Case Of Gaussian Elimination"** *Beautiful Code: Leading Programmers Explain How They Think*, Andy Oram and Greg Wilson eds. O'Reilly Media, Inc., June, 2007.

Dongarra, J., Chen, Z., Bosilca, G., Langou, J. **"Disaster Survival Guide in Petascale Computing: An Algorithmic Approach"** *Petascale Computing: Algorithms and Applications*, Chapman & Hall - CRC Press, 2007.

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The newsletter is available online at:
<http://icl.cs.utk.edu/newsletter/2007/icl-news-2007-09.pdf>

Comments and contributions can be sent to:
icl-news@cs.utk.edu